

of pilot-control; and the problem cannot be solved by a simple "blip-switch."

Many of the British aircraft firms which are world-famous to-day were started from small beginnings, much as was the de Havilland concern. There was A. V. Roe (now Sir Alliott Verdon-Roe), who was among the earliest British experimenters. Mr. (now Sir Frederick) Handley Page concentrated on automatic stability in his small machines, but in the first world war began his long line of large aircraft. There were Short Brothers, who were the first British company to be formed especially for manufacturing aircraft. They turned to seaplanes and ultimately became specialists in flying boats.

Weird and wonderful as were many of the early flying machines, none was more so than the monoplanes and biplanes designed by Lieut. Dunne. *Flight* described one of them as "the most remarkable and interesting machine yet constructed," and with some truth. It was a tailless pusher, and on one occasion was flown for a considerable time "hands off," the flight being officially observed and attested by Mr. Griffith Brewer. The wheel has now turned full circle, and we have the Armstrong Whitworth tailless machines, designed for low drag rather than the "inherent stability" sought by Dunne. Nowadays we are struggling with swept-back wings to delay the onset of compressibility. Dunne used it forty years ago. Truly there is nothing new under the sun. It is of interest to recall that Dunne was helped in his work by Mr. (now Sir Richard) Fairey, whose firm has since joined the list of the famous.

Few British aircraft engines were available in the earliest days, and many of the experimenters had to use

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French engines, notably the Gnome. A few years after flying had started, the Green engine was introduced, a four-cylinder water-cooled of some 50 h.p. It was heavy, but comparatively reliable. It took the first world war to give the necessary encouragement, and then began the development which resulted in establishing the fame of such names as Cirrus and de Havilland in the lower powers and Armstrong Siddeley, Bristol, Napier and Rolls-Royce in the high-power ranges. All of these, with the exception of Cirrus, are now taking a leading part in the evolution of turbine power plants.

The fact that so many of the pioneers are still very much alive to-day, and are still contributing their share to the progress of flying, serves to show how far aviation has progressed within the active lifetime of many of our present aircraft constructors.



**BI-ELEMENTAL:** The Short Sealand amphibian flying boat—one of the most promising of Britain's new civil aircraft—after a test flight at Belfast. Mr. Brooke-Smith, chief test pilot, Short Bros. and Harland Ltd., is seen in the spacious cockpit. Two versions of the Sealand are offered: one with D.H. Gipsy Queen engines and the second with the more powerful Alvis Leonides radials.